

## REMARKS

Claims 1-17 and 28-30 are pending in this application and stand rejected under 35 U.S.C. §102 (b) as allegedly being anticipated by U.S. Patent 6,006,225 (“Bowman”). Applicants respectfully disagree and request reconsideration of the present application in light of the below recited remarks.

### *Interview Summary*

Kenneth R. Eiferman and the Examiner participated in a telephonic interview on January 18, 2005 to discuss the independent claims in relation to Bowman. During the interview, the Examiner asserted that she construed the search terms of Bowman (see Fig. 5a, element 142) to be analogous to search concepts as recited in the independent claims of the present application. The Examiner further asserted that she construed the prefix values of Bowman (see Fig. 5a, element 146) to be analogous to relative popularities as recited in the independent claims of the present application.

Mr. Eiferman noted that the independent claims require not only search concepts and relative popularities, but “search concepts each having a relative popularity *proportional to a total number of previous queries which have been mapped to the concept.*” Mr. Eiferman noted that, in Bowman, the prefix values 146 are proportional *only to previous queries which have been mapped to both the search terms 142 and a particular key term 140.* Thus, the prefix values 146 are *not* proportional to a *total number* of previous queries which have been mapped to the search terms 142. Rather, the prefix values 146 for the search terms 142 are broken down with respect to key terms 140. The Examiner agreed to reevaluate the rejection in light of this discussion.

### *Claim Rejections Under 35 U.S.C. § 102(e)*

Claims 1-17 and 28-30 are pending in this application and stand rejected under 35 U.S.C. §102 (b) as allegedly being anticipated by U.S. Patent 6,006,225 (“Bowman”). Applicants respectfully disagree.

The present application discloses systems and methods for query refinement to enable improved searching based on identifying and utilizing popular concepts related to user's queries. More specifically there is disclosed:

“In a method of one embodiment, a query is received from a user, and then mapped to one or more search concepts. A list of search concepts associated with the query is then displayed. Alternatively or additionally, the search concepts associated with the query are used to provide a set of improved search results. (Application, Summary of the invention).”

Thus, the present application discloses generating improved search results by performing a query refinement prior to executing a search. During the query refinement, an original query term may be matched to a search concept term that is more closely related to the user's intent. An improved search may then be performed using the search concept term rather than the original query term. For example, a user wishing to find information about George Bush Jr. may enter an original query “George Bush”. Such an original query, if executed, will return results about both George Bush Jr. and George Bush Sr. The present invention may, prior to execution of the query, match the original query to two search concepts: “George Bush Jr.” and “George Bush Sr.”. The user may then execute an improved search using the search concept term “George Bush Jr.” rather than the original query term “George Bush”. The improved search will generate improved results by targeting the search to George Bush Jr.

Each concept may have a set of associated key phrases that may be used to search for the concept. For example, the concept “George Bush Jr.” may have associated key phrases, “George W. Bush” and “43rd President”, while the concept “George Bush Sr.” may have associated key phrases “George H.W. Bush” and “41<sup>st</sup> President”. Furthermore, each concept may have a relative popularity which is proportional to a number of times the key phrases associated with the concept have been previously used. For example, if either of the terms “George W. Bush” or “43rd President” appeared in 40 previous queries, and either of the terms “George H.W. Bush” or “41<sup>st</sup> President” appeared in 10 previous queries, then the concept “George Bush Jr.” may have a relative popularity of 4, while the concept “George Bush Sr.” may have a relative popularity of 1 (based on a 4 to 1 ratio). The relative

popularities of the search concepts may be used to order a displayed list of the search concepts or to determine a number of returned search results for each of the search concepts.

In contrast to the claimed invention, Bowman disclose a query refinement system in which key terms appearing in a query are matched to related terms. The key terms are matched to the related terms based on a number of times that the key terms have been used together with the related terms in previous queries. As shown in Fig. 5A of Bowman, a record is kept of the number of times each search term (142) has been used together in a previous query with a particular key term (140).

Importantly, Bowman does not teach or suggest “search concepts each having a relative popularity proportional to a total number of previous queries which have been mapped to the concept,” as recited in independent claims 1, 9, and 28. As explained in the Interview Summary, in Bowman, the prefix values 146 are proportional only to previous queries which have been mapped to both the search terms 142 and a particular key term 140. Thus, the prefix values 146 are not proportional to a total number of previous queries which have been mapped to the search terms 142. Rather, the prefix values 146 for the search terms 142 are broken down with respect to key terms 140. For example, in column 1 of Fig. 5A, for the search term “trail”, its prefix value 41 (see element 146) is increased only if it has appeared in a previous query together with the key term “bike” (see element 140). Furthermore, in column 2, for the search term “trail”, its prefix value 7 (see element 146) is increased only if it has appeared in a previous query together with the key term “outdoor” (see element 140). By contrast, in the claimed invention, the relative popularity of a concept is proportional to the “total number” of previous queries to which the concept has been mapped, and is not broken down with respect to particular key terms (140).

Applicants respectfully submit that dependent claims 2-8, 10-17, 29 and 30 are patentable at least by reason of their dependency. Accordingly, reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejections are respectfully requested.

DOCKET NO.: MSFT-1351/158486.1  
Application No.: 09/682,040  
Office Action Dated: November 29, 2004

PATENT  
REPLY FILED UNDER EXPEDITED  
PROCEDURE PURSUANT TO  
37 CFR § 1.116

**CONCLUSION**

In view of the above remarks, Applicant respectfully submits that the present application is in condition for allowance. Reconsideration of the application and an early Notice of Allowance are respectfully requested.

Date: January 21, 2005

  
Kenneth R. Eiferman  
Registration No. 51,647

Woodcock Washburn LLP  
One Liberty Place - 46th Floor  
Philadelphia PA 19103  
Telephone: (215) 568-3100  
Facsimile: (215) 568-3439